

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 13

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte FERDINAND REITER

Appeal No. 2001-0305
Application No. 09/077,356

ON BRIEF

Before ABRAMS, FRANKFORT and BAHR, Administrative Patent Judges.
BAHR, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 9-16. On page 2 of the answer (Paper No. 12), the examiner withdrew the rejection of claims 15 and 16, indicating them to be allowable. Accordingly, this appeal involves only claims 9-14. No other claims are pending in this application.

BACKGROUND

The appellant's invention relates to a valve needle for an injection valve (specification, p. 1). Claim 9 is illustrative of the invention and reads as follows.

9. A valve needle for use in an electromagnetically operable injection valve of a fuel injection system in an internal combustion engine, comprising:

an armature;

a metal valve closing element; and

a plastic connecting part having a first end coupled to the armature and a second end coupled to the metal valve closing element, wherein the plastic connecting part includes an orifice that has a bottom and runs in a direction of the armature from a lower end face located at the second end of the plastic connecting part, wherein the orifice has at least two successive areas of different diameters, and wherein a section of the metal valve closing element engages the orifice of the plastic connecting part in a form-fitting manner.

The examiner relied upon the following prior art references of record in rejecting the appealed claims:

Ament	4,497,298	Feb. 5, 1985
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Soviet Patent No. 596,746 (the Soviet patent)	Feb. 16, 1978 ¹
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¹ Our understanding of this reference is derived from the translation
(continued...)

Claims 9-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ament in view of the Soviet patent.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejection, we make reference to the answer (Paper No. 12) for the examiner's complete reasoning in support of the rejection and to the brief (Paper No. 11) for the appellant's arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we make the determinations which follow.

Ament discloses a fuel injection valve comprising an armature 82 and a needle valve 42 including a metal valve tip 90 (the valve closing element) and a compliant plastic shank

¹(...continued)
submitted with appellant's brief as Appendix B.

portion 92 having a first end (fluted valve guide 93) and a second end having an orifice (blind bore 95) suitably sized to receive the pin 94 of the valve tip 90 by a press fit (col. 6, lines 54-56). The examiner has determined that the only difference between Ament's valve and the subject matter of claim 9 is that Ament does not show the blind bore (orifice) having at least 2 successive areas of different diameters and appellant does not appear to challenge that determination. It is the examiner's position that the Soviet patent would have suggested providing the blind bore 95 and valve tip pin 94 of Ament with grooves and shoulders (answer, p. 4).

The Soviet patent is directed to a non-detachable interference fit coupling, produced under the influence of temperature on the parts to be joined, for joining pipes or rods using connecting pieces, locking parts and other connecting parts (translation, p. 1). The coupling disclosed in the Soviet document includes a female part 1 provided with grooves 3 on the interior surface 2 thereof and a male part 4 provided with projections 6 on the exterior surface 5 thereof. The process of joining the parts 1 and 4 is carried out by heating the female part 1 to a preselected temperature to

cause expansion thereof and introducing the male part 4 into the hollow space of the female part 1 such that the grooves 3 are situated over the projections 6. After the temperature of the parts 1 and 4 is equalized, the interior surface 2 of the female part 1 presses firmly against the exterior surface 5 of the male part 4 and the projections 6 enter into the grooves 3 (translation, p. 4).

The Soviet patent evidences that non-detachable interference-fit couplings comprising male parts provided with projections and female parts provided with grooves were well known in the art at the time of appellant's invention. From our perspective, it would have been obvious to one skilled in the art at the time of appellants' invention to provide annular projections on the exterior surface of the pin 94 of Ament's valve tip 90 and corresponding grooves on the interior surface of the blind bore 95 of Ament's shank portion 92 in order to obtain the self-evident advantage of a positive locking to provide a more secure attachment.

Appellant argues on pages 4 and 5 of the brief that the Soviet patent is non-analogous art. We do not agree. The test for non-analogous art is first whether the art is within

the field of the inventor's endeavor and, if not, whether it is reasonably pertinent to the problem with which the inventor was involved. In re Wood, 599 F.2d 1032, 1036, 202 USPQ 171, 174 (CCPA 1979). A reference is reasonably pertinent if, even though it may be in a different field of endeavor, it logically would have commended itself to an inventor's attention in considering his problem because of the matter with which it deals. In re Clay, 966 F.2d 656, 659, 23 USPQ2d 1058, 1061 (Fed. Cir. 1992). As explained on page 2 of appellant's specification, one of the problems with which appellant was involved was providing a simple and secure connection of the valve closing element and the connecting part, such that the possibility of detachment during the axial movement of the valve needle is completely ruled out. Likewise, the Soviet patent is directed to a non-detachable coupling of male and female parts which is simple to manufacture (translation, p. 4) and, thus, would have commended itself to an artisan faced with the problem addressed by appellant. Thus, we conclude that the Soviet patent is analogous art in the context of appellant's invention.

Appellant's only other argument against the examiner's rejection is that the Soviet patent does not suggest that the coupling described therein can be used to couple parts made from different materials (brief, p. 5). We do not find this argument persuasive of the nonobviousness of the modification proposed by the examiner.

It is well settled that "[u]nder section 103, teachings of references can be combined only if there is some suggestion or incentive to do so." ACS Hospital Sys., Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). However, as stated in Motorola Inc. v. Interdigital Tech. Corp., 121 F.3d 1461, 1472, 43 USPQ2d 1481, 1489 (Fed. Cir. 1997):

there is no requirement that the prior art contain an express suggestion to combine known elements to achieve the claimed invention. Rather, the suggestion to combine may come *from* the prior art, as filtered through the knowledge of one skilled in the art. See *In re Jones*, 958, F.2d 347, 351, 21 USPQ2d 1941, 1943-44 (Fed. Cir. 1992) ("there must be some suggestion for [combining prior art references], found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art"); *In re Nilssen*, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988) (rejecting applicant's argument that the prior art must contain an express

suggestion to combine); see also *In re Oetiker*, 977 F.2d 1443, 1449, 24 USPQ2d 1443, 1446-47 (Fed. Cir. 1992) (Neis, C.J., concurring) ("[W]e must look at the obviousness issue through the eyes of one of ordinary skill in the art and what one would be presumed to know with that background.").

Like appellant, we find no express teaching in the Soviet patent of a coupling having a female part made of one material (e.g., plastic) and a male part made of a different material (e.g., metal). However, while the disclosed process used to form the coupling of the Soviet patent relies on the female part being made of a material which expands upon heating, the Soviet patent does not even hint that the male and female parts used to form the coupling must be made of the same material. Assuming, as we must, that the artisan had knowledge of the coupling of the Soviet patent and its benefits, we believe the artisan would have derived from such knowledge that it is equally applicable to a coupling between a metal valve tip pin and a plastic shank portion, such as in the needle valve 42 of Ament, to achieve the benefits of a simple and secure coupling. To conclude otherwise would be to improperly assume that the artisan possesses less than

ordinary skill. In re Sovish, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985).

For the foregoing reasons, we are satisfied that the combined teachings of Ament and the Soviet patent are sufficient to have suggested the subject matter of claim 9. Therefore, we shall sustain the examiner's rejection of claim 9, as well as claims 10-14 which appellant has grouped therewith (brief, p. 3).

CONCLUSION

To summarize, the decision of the examiner to reject claims 9-14 under 35 U.S.C. § 103 is affirmed.

No time period for taking any subsequent action in
connection with this appeal may be extended under 37 CFR
§ 1.136(a).

AFFIRMED

NEAL E. ABRAMS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
CHARLES E. FRANKFORT)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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JENNIFER D. BAHR)	
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